NAVSEA
STANDARD ITEM

FY-05

ITEM NO: 009-58
DATE: 29 AUG 2003
CATEGORY: II

1. SCOPE:

1.1 Title: Pump and Driver Shaft Alignment; accomplish

2. REFERENCES:

2.1 S6226-JX-MMA-010, Instruction Manual for the Indicator Reverse Method of Pump Shaft Alignment

2.2 803-6397419, Standard Machinery Shim Kits

3. REQUIREMENTS:

3.1 Measure pump and driver shaft alignment using the indicator reverse method and the mathematical equations or graphs or alignment computer in accordance with 2.1.

3.1.1 Determine soft foot and correct in accordance with Section 2-2 of 2.1. Shims shall be in accordance with 2.2.

(V) or (V)(G) "INSPECT PIPING ALIGNMENT" (See 4.4)

3.2 Inspect piping alignment in accordance with Section 2-3 of 2.1 prior to removal and at installation.

3.2.1 Submit one legible copy, in hard copy or electronic media, of a report listing results of the requirements of 3.2 to the SUPERVISOR.

3.3 Measure indicator sag in accordance with Section 2-4 of 2.1.

(V)(G) "COLD ALIGNMENT" (See 4.5)

3.4 Align each shaft to the offset and angular alignments in accordance with the cold alignment settings invoked in the Work Item (see 4.1). Cold alignments for horizontally mounted machinery shall be accomplished in accordance with Chapter 2, Sections 2-1 through 2-7 of 2.1, and vertically mounted machinery shall be in accordance with Chapter 5, Sections 5-1 through 5-3 of 2.1.

3.4.1 Submit one legible copy, in hard copy or electronic media, of a completed alignment data collection form (Page 7-2 of 2.1) for the results of the requirements of 3.4 to the SUPERVISOR.

3.5 Align shafts so that offset and angular alignments are acceptable when the unit is hot. Acceptable alignment tolerances shall be based on the rated speed of the pump and the alignment tolerance listed in Table 1-1 of 2.1 (see 4.2). Hot alignments for horizontally mounted machinery shall be accomplished in accordance with Chapter 2, Section 2-1 through 2-8 of 2.1. Accomplish hot alignment check only on units that the cold alignment has been compensated for thermal growth. (Hot alignment readings must be taken within 30 minutes of shutting down unit).

3.5.1 Fit and install new chocks and shims conforming to ASTM A240 to accomplish alignment. Shims shall be in accordance with 2.2.

3.5.2 Drill and ream foundations. Fit and install new SAE-AMS-QQ-S-763, Grade 304, dowels in each unit to retain final satisfactory unit alignment in accordance with Section 2-8 of 2.1.

(V)(G) "FINAL HOT ALIGNMENT"

3.6 Accomplish a final hot alignment check of horizontally mounted pumps with dowels installed.

3.6.1 Submit one legible copy, in hard copy or electronic media, of a report listing results of the requirements of 3.6 to the SUPERVISOR. The report shall include the following:

3.6.1.1 Ship's name and hull number

3.6.1.2 Contractor and subcontractor

3.6.1.3 Job Order and Work Item number

3.6.1.4 Identity of pump aligned

3.6.1.5 Completed alignment data collection form (Page 7-2 of 2.1) for final hot alignment condition

4. NOTES:

4.1 Reference that contains the cold setting alignment will be identified in the invoking Work Item.

4.2 Hot alignment criteria if different from zero will be identified in the invoking Work Item.

4.3 Motor driven units must be run a minimum of 4 hours to achieve operating temperature. Turbine driven unit must be run a minimum of 2 hours to achieve operating temperature.

4.4 (V) is invoked for prior-to-removal inspection. (V)(G) is invoked for installation inspection.

4.5 (V)(G) is invoked only when hot alignment is not required.